<u>What Is Claimed Is:</u>

1. A method for optimizing a starting torque and for reducing an electrical power usage of a starter-generator for an internal combustion engine, the starter-generator being configured as an electrical machine that is operated in accordance with an inverter, the method comprising the steps of:

causing a battery to generate an electrical power;

limiting a phase current of the electrical machine for reaching an imaginary turning point on a torque characteristic curve of the electrical machine; and

controlling the electrical machine beginning at a limiting point along an electrical limiting power curve such that the electrical power corresponds to that at a stationary operating point of the electrical machine.

2. The method according to claim 1, wherein:

the starter-generator includes a claw pole generator that is operated using an indirect a.c. converter.

3. The method according to claim 1, further comprising the step of:

obtaining the electrical limiting power curve by measuring a voltage of battery terminals and by measuring a limiting value regulation of the phase current at a voltage lower limit.

4. The method according to claim 3, wherein:

at the limiting point a limiting of the electrical power of the starter-generator occurs along the electrical limiting power curve at P_{el}=const, so that $P_{el} \le P_{el}$ at the stationary operating point is always satisfied.

5. The method according to claim 1, wherein:

in order to improve a cold-start function in the inverter assigned to the electrical machine, an increased starting torque can be set for the electrical machine.

6. The method according to claim 2, wherein:

a power limiting of the claw pole generator operated in the indirect a.c.

converter takes place at the limiting point beginning with an internal combustion engine rotational speed corresponding to the limiting point, by reducing a setpoint phase current of the claw pole generator.

7. The method according to claim 2, wherein:

an angle between a phase voltage space vector and a phase current space vector is influenced beginning with a preestablished internal combustion engine rotational speed corresponding to the limiting point.

8. The method according to claim 1, further comprising the step of:

storing a maximum electrical limiting power and a minimum battery voltage curve corresponding to the maximum electrical limiting power as a temperature-dependent characteristic curve relationship.

9. The method according to claim 1, wherein:

at the stationary operating point, an electrical efficiency of the electrical machine, instead of an efficiency at the imaginary turning point of the torque characteristic curve, determines a maximum battery output.